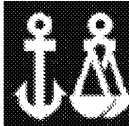


# Operational FQT Report : 27-Mar-2014

## STENA PRIMORSK (9299147)



DNV

### Summary



Based on the Sulfur result and the commercial sample received, the fuel is potentially non-compliant. Please refer to the advice on the next page for more information.



Please take note of the precautions on the next page related to the fuel quality trend of the past four bunker samples

<b>Sample Number</b>	ROT1411105	<b>Customer</b>	NORTHERN MARINE MANAGEMENT
<b>Product Type</b>	(LSFO)	<b>Seal Data</b>	DNVPS, SEAL INTACT, 5230131
<b>Bunker Port</b>	GOTHENBURG		
<b>Bunker Date</b>	22-Mar-2014	<b>Related Samples</b>	
<b>Sampling Point</b>	SHIP MANIFOLD	<b>Supplier</b>	5230132
<b>Sampling Method</b>	CONTINUOUS DRIP	<b>Ship</b>	5230133
<b>Sent From</b>	GOTHENBURG	<b>MARPOL</b>	134296
<b>Date Sent</b>	25-Mar-2014		
<b>Arrived at Lab</b>	26-Mar-2014		
<b>Supplier</b>	STENA OIL		
<b>Loaded From</b>	NORDEN		
<b>Quantity per C.Eng.</b>	200		

### Receipt Data

Source Of Data	B.D.N.	Sulfur	0.99	% m/m	
Density @ 15°C	991.0	kg/m³	Volume @ 15°C	202.301	m³
Viscosity @ 50°C	380.0	mm²/s	Quantity	200.480	MT

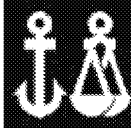
### Fuel Quality

Current	Trend	Parameter	GOTHENBURG 22-Mar-2014	HOU1406630 MARCUS HOOK 07-Mar-2014	HOU1406042 FREEPORT (BS) 28-Feb-2014	ROT1405701 OFF GABON 26-Jan-2014	Unit
		Density @ 15°C	990.8	989.2	990.2	990.8	kg/m³
		Viscosity @ 50°C	394.4	250.7	304.3	381.2	mm²/s
		Water	0.1	0.1	0.2	0.2	% V/V
		Micro Carbon Residue	16	13	14	15	% m/m
		Sulfur	1.02	1.08	2.88	2.28	% m/m
		Total Sediment Potential	LT 0.01	0.02	0.04	LT 0.01	% m/m
		Ash	0.03	0.05	0.07	0.05	% m/m
		Vanadium	36	25	175	170	mg/kg
		Sodium	46	46	31	26	mg/kg
		Iron	9	41	15	47	mg/kg
		Nickel	22	41	43	44	mg/kg
		Calcium	13	14	14	2	mg/kg
		Magnesium	1	5	2	LT 1	mg/kg
		Zinc	LT 1	3	2	1	mg/kg
		Phosphorus	LT 1	2	2	LT 1	mg/kg
		Potassium	LT 1	2	1	LT 1	mg/kg
		Pour Point	LT 24	LT 24	LT 24	LT 24	°C
		Flash Point	GT 70	GT 70	GT 70	GT 70	°C
		Aluminium + Silicon	9	48	45	11	mg/kg
		CCAI (Ignition Quality)	851	855	853	852	-
		Reported problems with fuel		No	No	No	



# Operational FQT Report : 27-Mar-2014

## STENA PRIMORSK (9299147)



DNV

### Operational Advice :

	<p>Sulfur - Based on this commercial sample and the sulfur content specified on the BDN, the fuel oil is potentially non-compliant if used within a designated Emission Control Area (ECA, ref. MARPOL Annex VI Reg. 14(4)). It is recommended that the situation is recorded through a notification or Note of Protest (NoP) issued by the Master. Only the relevant official authorities can then advise on any further action necessary. Please note that the official MARPOL sample provided by the supplier is the governing sample regarding the compliance with this statutory requirement. For assistance issuing the Note of Protest, please refer to DNVPS' Instruction Manual.</p>
	<p>Noticeable amount of abrasive contaminants as indicated by Aluminum + Silicon can accumulate in the tanks onboard also for fuels within specification. It is recommended that tanks and filters are frequently drained to avoid carry over to the engine. We also recommend that samples are taken regularly before and after centrifuge to check centrifuge efficiency (Fuel System Check testing).</p>
	<p>Approximate fuel temperatures:</p> <p>Injection:</p> <p>145°C for 10 mm<sup>2</sup>/s 125°C for 15 mm<sup>2</sup>/s 115°C for 20 mm<sup>2</sup>/s 110°C for 25 mm<sup>2</sup>/s</p> <p>Transfer :</p> <p>45°C</p>
<p>DNVPS Colour Code used :</p> <p> Satisfactory       Caution       Use of fuel not recommended       Fuel Trend</p>	
<p>Note:</p> <p>LT means Less Than, GT means Greater Than.</p> <p>Quantity (Weight) is based on BDN Volume, DNVPS Density and a weight factor of 1.1 kg/m<sup>3</sup> (ASTM D1250-80 Table 56).</p> <p>Best Regards,</p> <p>On behalf of DNV Petroleum Services Pte Ltd</p> <p>Arent Jansen</p> <p>Technical Advisor</p> <p>End of Report for STENA PRIMORSK</p> <p>Reference to part(s) of this report which may lead to misinterpretation is prohibited.</p> <p>For technical or operational advice or further information on this report please contact your nearest DNVPS office or contact us directly at Tel : +31 10 2922600 Email : <a href="mailto:tvpl155@dnvps.com">tvpl155@dnvps.com</a></p>	